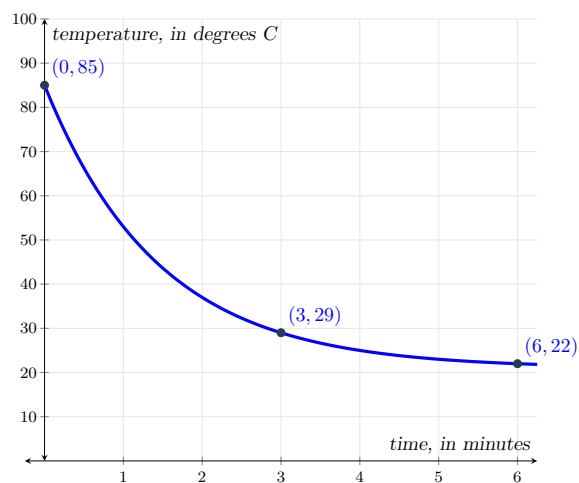


**Exercise 1** The graph below shows the temperature  $T$ , in degrees Celsius, of an object at time  $t$ , in minutes.



- (a) Based on the graph above, is this object heating up or cooling down?

**Multiple Choice:**

- (i) Heating Up
- (ii) Cooling Down ✓

- (b) What is the rate of change in this data between the point corresponding to  $t = 0$  minutes, and the point corresponding to  $t = 3$  minutes?  $-56/3$  degrees Celsius/minute.

**Hint:** Recall that the rate of change between two data points is given by  $\frac{\Delta T}{\Delta t}$ .

- (c) What is the rate of change in this data between the point corresponding to  $t = 3$  minutes, and the point corresponding to  $t = 6$  minutes?  $-7/3$  degrees Celsius/minute.

- (d) Based on the your answers above, does this data always have the same rate of change?

**Multiple Choice:**

- (i) Yes
- (ii) No ✓